

REMARKS

Claims 1, 5, 10, 12, 17, 19 and 24 have been amended. Claims 1-27 are pending. Applicant reserves the right to pursue the original and other claims in this and in other applications.

Claims 1-3 and 26 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,240,424 ("Hirata"). Applicant respectfully traverses the rejection.

The claimed invention relates to a technique for displaying an image space and an apparatus for spatially displaying features of an image. In a preferred embodiment, the classification method for classifying an image includes extracting a query image from a plurality of images, searching for a representative image according to a predetermined similarity level, registering the query image, and adding the query image into a group represented by the resembling image found as a result of the search based on predetermined similarity level. The images are classified according to similarity among the images, for details, please refer to the specification, page 5+. The claimed invention should not be limited, however, to the preferred embodiments described and shown in the specification and drawings.

An important feature of the claimed invention as recited in claim 1 is "displaying one or more representative images in an order based on the predetermined similarity level." An advantage of the feature is that it enables the user, in instances where the search target is a complicated character or text, to obtain the desired result without the user having to specify the complicated character or text using several objects. In addition, in instances where the search target is a complicated character or text, it is possible that a precise matching may not be obtained by the user specifying only a select set of objects.

Hirata is directed to a method and apparatus for classifying and querying a database of images. Hirata provides a classification based on primary objects in which the images are classified into categories based on the objects contained in the images. The primary objects used are a circle object, a rectangular object, and a triangular object. Search queries based on a primary object allow the user to create a visual example for a search query. Unlike Hirata, the claimed invention performs a search and displays the search result based on the degree of "similarity" among the images. Because Hirata does not disclose or teach all of the limitations of claim 1, Applicant respectfully submits that the claim should be allowed.

Claims 2-3 and 26 depend from claim 1 and therefore, are allowable for at least the same reasons as claim 1.

Claim 4 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Hirata in view of U.S. Publication No. 2003/0011683 ("Yamasaki"). Applicant respectfully traverses the rejection.

Claim 4 depends from claim 1 and therefore, contains all of the limitations of claim 1. As mentioned earlier, Hirata does not disclose or teach all of the limitations of claim 1. Yamasaki does not cure the deficiency of Hirata. The Office Action relies on Yamasaki as teaching a hierarchical structure formed as layers of a directory of a file system. Because the references do not disclose or teach all of the limitations, claim 4 should be allowable.

Claims 5-7, 12-14, 19-21 and 27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over "Recursive Space Decompositions in Force-Directed Graph Drawing

Algorithms" ("Pulo") in view of U.S. Publication No. 2003/0198384 ("Vrhel"). Applicant respectfully traverses the rejection.

Claim 5 recites an image feature space display method wherein "the feature space indicates at least one of a histogram feature, an edge feature, and a texture feature, and [] distance between points in the feature space become shorter as similarity of images becomes greater." Applicant respectfully submits that Pulo and Vrhel, even when combined, do not teach or suggest these limitations.

Pulo is directed to a recursive space decomposition system which stores proximity information by using grouping of objects. Vrhel is directed to a method for isolating an element of an image through a segmentation process in which the captured image is converted from RGB values to a colorimetric space. Vrhel teaches only a color value as a feature amount for adjusting the shade of a color. The Office Action concedes that Pulo and Vrhel do not disclose a "feature space indicat[ing] at least one of a histogram feature, an edge feature, and a texture feature" but contends that it would have been obvious to use the formulas and methods of Pulo and Vrhel on images. Applicant respectfully disagrees. There is no apparent reason to combine the two references to teach a "feature space indicat[ing] at least one of a histogram feature, an edge feature, and a texture feature." Even otherwise, both Pulo and Vrhel do not disclose or teach that the "distance between points in the feature space become shorter as similarity of images becomes greater." The references do not use "similarity" of images in the methods disclosed therein. For these reasons, Applicant respectfully submits that claim 5 should be allowable.

Claims 6-7, 12-14, 19-21 and 27 depend from claim 5 or contain similar limitations as claim 5. For at least the reasons mentioned above, claims 6-7, 12-14, 19-21 and 27 should be allowable.

Claims 8-9, 15-16 and 22-23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Pulo in view of Vrhel and Hirata. Applicant respectfully traverses the rejection. Claims 8-9, 15-16 and 22-23 either depend from claim 1 or 5, or contain similar limitations. For at least the reasons mentioned earlier, claims 8-9, 15-16 and 22-23 should be allowable.

Claims 10-11, 17-18 and 24-25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Pulo in view of Vrhel and Savakis. Applicant respectfully traverses the rejection. Claims 10-11, 17-18 and 24-25 either depend from claim 1 or 5, or contain similar limitations. As mentioned earlier, Pulo and Vrhel do not disclose or teach all of the limitations. Savakis does not cure the deficiencies of Pulo and Vrhel. The Office Action relies on Savakis as teaching only a k-means function to divide a subject matter. Because the references, even when combined, do not teach or suggest all of the limitations, claims 10-11, 17-18 and 24-25 should be allowable.

In view of the above, Applicant believes the pending application is in condition for allowance.

Dated: October 2, 2007

Respectfully submitted,

By 

Mark J. Thronson

Registration No.: 33,082

Ranga Sourirajan

Registration No.: 60,109

DICKSTEIN SHAPIRO LLP

1825 Eye Street, NW

Washington, DC 20006-5403

(202) 420-2200

Attorneys for Applicant